

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): An image sensor, comprising:

a storage means for storing a plurality of pixel data which is transmitted from a pixel array block;

a switching means for delivering a first pixel data from the storage means in response to a first control signal RASS;

a defect pixel repairing means which is controlled by the first, a second, a third, a fourth and a fifth control signals in order to receive surrounding pixel data having the first pixel data from the storage means and the first pixel data from the switching means and output a revised pixel data by using the first pixel data or the surrounding pixel data; and

a image signal handling means for receiving the first pixel data outputted from the switching means or one of the first pixel data and the revised pixel data outputted from the defect pixel repairing means and operating an image process in order to improvement of the image sensor,

wherein the switching means includes a first switching means controlled by the first control signal and an inverse first control signal in order to transmit the first pixel data to the image signal handling means and a second switching means controlled by the first control signal and the inverse first control signal in order to transmit the first pixel data to the defect pixel repairing means,

wherein when the first control signal is a logical high, the first switching means is off and the second switching means is on.

Claim 2 (Previously Presented): The image sensor as recited in claim 1, wherein the defect pixel repairing means includes

a temporary storage means for temporary storing the second control signal;

a column address detecting means for comparing the second control signal outputted from the temporary storage means with the fourth control signal and generating a sixth control signal showing whether the second control signal is equal to the fourth control signal or not;

a update controlling means for outputting an next second control signal to the temporary storage means in response to the sixth, the third and the fifth control signals;

a defect pixel changing means for receiving the surrounding pixel data and generating the revised pixel data;

a revised pixel selecting means for selectively outputting the revised pixel data or the first pixel data in response to the sixth control signal; and

a switch outputting means controlled by the first control signal in order to selectively output an output of the revised pixel selecting means.

Claim 3 (Original): The image sensor as recited in claim 2, wherein the defect pixel changing means generates the revised pixel data by using an average of the surrounding pixel data.

Claim 4 (Original): The image sensor as recited in claim 2, wherein the defect pixel changing means generates the revised pixel data by using one out of the surrounding pixel data except the first pixel data.

Claim 5 (Original): The image sensor as recited in claim 2, wherein the update controlling means includes

a first D flip-flop for receiving the third control signal and outputting a current third control signal;

a second D flip-flop for receiving the current third control signal and outputting a next third control signal;

a first AND gate for receiving the current third control signal and the next third control signal;

an OR gate for receiving the current third control signal and an output of the first AND gate;

a second AND gate for receiving the sixth control signal and an output of the OR gate;
and

a XOR gate for receiving the fifth control signal and an output of the second AND gate and outputting a seventh control signal for updating the second control signal.

Claim 6 (Original): The image sensor as recited in claim 2, wherein the revised pixel selecting means includes two transmission gates controlled by the sixth control signal or the inverse sixth control signal in order to selectively deliver the first pixel data or the revised pixel data.

Claim 7 (Cancelled)

Claim 8 (Currently Amended): An image sensor, comprising:

a storage unit for storing a plurality of pixel data which is transmitted from a pixel array block;

a switching unit for delivering a first pixel data from the storage unit in response to a first control signal RASS;

a defect pixel repairing unit which is controlled by the first, a second, a third, a fourth and a fifth control signals in order to receive surrounding pixel data having the first pixel data from the storage unit and the first pixel data from the switching unit and output a revised pixel data by using the first pixel data or the surrounding pixel data; and

a image signal handling unit for receiving the first pixel data outputted from the switching unit or one of the first pixel data and the revised pixel data outputted from the defect pixel repairing unit and operating an image process in order to improvement of the image sensor,

wherein the switching unit includes a first switch controlled by the first control signal and an inverse first control signal in order to transmit the first pixel data to the image signal handling unit and a second switch controlled by the first control signal and the inverse first control signal in order to transmit the first pixel data to the defect pixel repairing unit,

wherein when the first control signal is a logical high, the first switch is off and the second switch is on.

Claim 9 (Currently Amended): The image sensor as recited in claim-~~4~~8, wherein the defect pixel repairing unit includes

- a temporary storage unit for temporarily storing the second control signal;

- a column address detecting unit for comparing the second control signal outputted from the temporary storage unit with the fourth control signal and generating a sixth control signal showing whether the second control signal is equal to the fourth control signal or not;

- an update controlling unit for outputting a next second control signal to the temporary storage unit in response to the sixth, the third and the fifth control signals;

- a defect pixel changing unit for receiving the surrounding pixel data and generating the revised pixel data;

- a revised pixel selecting unit for selectively outputting the revised pixel data or the first pixel data in response to the sixth control signal; and

- a switch outputting unit controlled by the first control signal in order to selectively output an output of the revised pixel selecting unit.

Claim 10 (Currently Amended): The image sensor as recited in claim-~~2~~9, wherein the defect pixel changing unit generates the revised pixel data by using an average of the surrounding pixel data.

Claim 11 (Currently Amended): The image sensor as recited in claim-~~2~~9, wherein the defect pixel changing unit generates the revised pixel data by using one out of the surrounding pixel data except the first pixel data.

Claim 12 (Currently Amended): The image sensor as recited in claim-29, wherein the update controlling unit includes

- a first D flip-flop for receiving the third control signal and outputting a current third control signal;

- a second D flip-flop for receiving the current third control signal and outputting a next third control signal;

- a first AND gate for receiving the current third control signal and the next third control signal;

- an OR gate for receiving the current third control signal and an output of the first AND gate;

- a second AND gate for receiving the sixth control signal and an output of the OR gate;

and

- a XOR gate for receiving the fifth control signal and an output of the second AND gate and outputting a seventh control signal for updating the second control signal.

Claim 13 (Currently Amended): The image sensor as recited in claim-29, wherein the revised pixel selecting unit includes two transmission gates controlled by the sixth control signal or the inverse sixth control signal in order to selectively deliver the first pixel data or the revised pixel data.